REMARKS

Applicants have reviewed the Final Office Action of March 21, 2008, and the Advisory action of June 23, 2008. Claims 1, 2, 4, 5, 11, 14-16, 18-22, 25, 26, 30, 33, and 34 are pending. Reconsideration is requested.

In the Final Office Action, claims 1-5, 11-16, 18-26, and 30-34 were rejected under 35 U.S.C. 112, second paragraph, as allegedly being indefinite. The Examiner indicated that the claim amendments submitted in the Amendment After Final of May 21, 2008, had overcome this rejection.

In the Final Office Action, claims 1-5, 11-16, 18-26, and 30-34 were rejected under 35 U.S.C. 103(a) as allegedly being obvious over Krochta '164 (U.S. Patent No. 5,543,164) in view of Krochta '628 (U.S. Patent No. 6,869,628) and as evidenced by Shimada, 1989 *J. Agric. Food Chem.* 37:161-168. Applicants traverse the rejection.

In the Advisory Action, the Examiner noted that the motivation to combine may be for a different purpose or to solve a different problem. According to the Examiner, the cited references suggest the elasticity of a protein network is related to the number of disulfide bonds present or alternatively, the number of free sulfhydryl groups present.

The cited references do not suggest that the elasticity of a protein network is related to the number of free sulfhydryl groups present. Instead, they suggest that the elasticity is related to the number and character of disulfide bonds. Of particular importance to Applicants' argument is the fact that the number of disulfide bonds present is not the same thing as the number of free sulfhydryl (i.e. thiol) groups present.

Krochta '164 discloses heating a protein solution to initiate SH/S-S interchange reactions and SH oxidation reactions; see column 5, lines 5-43. Please note that in an SH/S-S interchange reaction, the number of thiol groups does not change. All that changes is the location of the disulfide bond from an intramolecular bond to an intermolecular bond; see instant Fig. 1. In an SH oxidation reaction, the number of thiol groups is reduced. In contrast, the instant specification notes that the claimed products

will have significantly higher numbers of free sulfhydryl groups; see page 13, lines 14-19. Krochta '164 does not disclose or suggest this result.

Krochta '628 discloses the use of mixtures of native and denatured whey proteins. The Examiner does not cite this reference as disclosing or suggesting a network with higher numbers of free sulfhydryl groups either, and the combination therefore does not have the higher number of free sulfhydryl groups as in the claimed products. Please note that the term "denatured" does not mean that disulfide bonds are broken into SH groups. Rather, it means that the original protein structure has been changed (i.e., from intramolecular S-S bonds to intermolecular S-S bonds). Applicants do not find any passages in Krochta '164 or Krochta '628 that suggest increasing the number of free SH groups is desirable.

On page 6 of the Final Office Action, the Examiner states that Shimada discloses the elasticity is related to the number of intermolecular S-S bonds in the gel network. Applicants agree with this statement. However, the Examiner then states that depending on the desired degree of elasticity, one of ordinary skill would recognize that the number of free sulfhydryl groups can be adjusted accordingly in the protein network of Krochta '164 in view of Krochta '628. Applicants disagree with this statement because the number of intermolecular S-S bonds and the number of free SH groups are not related to each other. The number of free sulfhydryl groups is not changed by an SH/S-S interchange reaction, and Shimada makes clear that the gel network is formed by interchange reactions; see pg. 166, left column ("..the polymers are formed mainly through intermolecular SH/S-S interchange reactions"); pg. 167, right column, first and second paragraphs ("Such bonds were caused by SH/S-S interchange reactions..."; "...the initial junction zones include intermolecular S-S bonds due to SH/S-S interchange reactions").

Based on the cited references, one of ordinary skill would adjust the number of intermolecular disulfide bonds to adjust the elasticity, not adjust the number of free sulfhydryl groups. In addition, the cited references do not suggest that adjusting the elasticity will result in higher numbers of free sulfhydryl groups, as in the claimed products. Instead, they suggest that the intermolecular S-S bond will become an intramolecular S-S bond; see instant Fig. 1. For at least these reasons, Applicants

submit that claim 1 and its dependent claims are not obvious based on the combination of Krochta '164 and Krochta '628

Applicants distinguished independent claim 20 on the basis that it required the use of sulfite ion forming agent at a pH of 7 or below, and that this pH was only suggested for enzymatic treatment, not chemical treatment. In the Final Office Action, the Examiner stated that it would be reasonable for one of ordinary skill to correlate the chemical treatment conditions with the enzymatic treatment conditions because both conditions are performed for the same intended purpose, thiol-disulfide exchange. The Examiner cited *In re Aller* as stating it was not inventive to discover the optimum or workable ranges by routine experimentation.

In response, Applicants submit that it would not be reasonable to correlate chemical treatment conditions with enzymatic treatment conditions. In particular, the Examiner appears to be suggesting that chemicals and enzymes are equivalents, as in MPEP 2144.06. Applicants agree that both treatments are intended to effect the same result of disulfide bond exchange. However, the treatments have different purposes. The pH conditions of enzymatic treatment have the purpose of optimizing the enzymes' reaction rate. In contrast, the pH of the chemical treatment prevents the sulfite agent from being retained in the film. See page 9, lines 8-13 of the instant specification. In other words, because the pH is related to the intended path by which the film is formed, Applicants submit that there is no motivation to use the enzymatic treatment conditions for the chemical treatment conditions. This is not a substitution of equivalents, as described in MPEP 2144.06, because enzymes and bisulfites are not equivalents.

The Examiner did not directly address this reasoning in the Advisory Action, and the above argument currently stands unrebutted.

As a result, Applicants submit that claim 20 and its dependent claims are not obvious based on the combination of Krochta '164 and Krochta '628

For at least these reasons, Applicants request withdrawal of the § 103(a) rejection based on Krochta '164 and Krochta '628.

Please note that the Amendment After Final was submitted within two months of the Final Office Action, and the Advisory Action was mailed on June 23, which was after the three-month date set forth in the Final Office Action. As a result, it is believed that this Preliminary Amendment maybe filed by July 23, 2008, with only a one-month extension of time being applicable.

CONCLUSION

For at least the reasons detailed above, it is respectfully submitted all claims remaining in the application (Claims 1, 2, 4, 5, 11, 14-16, 18-22, 25, 26, 30, 33, and 34) are now in condition for allowance.

In the event the Examiner considers personal contact advantageous to the disposition of this case, the Examiner is hereby authorized to call Jay F. Moldovanyi, at telephone number 216-861-5582, Cleveland, OH.

Respectfully submitted,

FAY SHARPE LLP

July 23, 2008
Date

Jay F. Moldovanyi, Reg. No. 29,678
Richard M. Klein, Reg. No. 33,000
George P. Huang, Reg. No. 57,945
1100 Superior Avenue, Seventh Floor
Cleveland, OH 44114-2579
216-861-5582

CERTIFICATE OF MAILING OR TRANSMISSION	
I hereby certify that this correspondence (and any item referred to herein as being attached or enclosed) is (are) being ☐ deposited with the United States Postal Service as First Class Mail, addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date indicated below. ☒ transmitted to the USPTO by electronic transmission via EFS-Web on the date indicated below.	
	Signature: Lynda S Kalemba
Date: July 23, 2008	Name: Lynda S. Kalemba

N:\LOYZ\200005\GXH0001108V001.docx